BRUHAT BANGALORE MAHANAGARA PALIKE
BYTARAYANPURA DIVISION

Name of Work:

The Work of Providing and laying of 400mm/500 mm dia RCC NP3 Class Sewerage pipeline from Manjunatha Kalyana Mantapa To M.S.Ramaiah North City gate along Strom Water Drain (SWD) Coming under Ward no.6- Thanisandra of Byatarayanapura Constituency

1ST& FINAL BILL

TEST REPORTS

TEJUS CONSULTANTS
CONSULTING ENGINEERS AND DESIGNERS
No.58 MIG, 6th Cross, 3rd Main
1st Stage, Basaveshwaranagar
Bangalore-560079
☎ 080 - 23287532
email: tejusconsultants@gmail.com

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TEJUS
CONSULTANTS

No. TC / BBMP / BYT-PMC / 405 / 19-20

To
The Executive Engineer
Byatarayanapura Division
Bruhat Bangalore Mahanagara Palike
Bangalore – 560 092

Date: 22-01-2020

Dear Sir

Sub: The Work of Providing and laying of 400mm/500 mm dia RCC NP3 Class Sewerage pipeline from Manjunatha Kalyana Mantapa To M.S.Ramaiah North City gate along Strom Water Drain (SWD) Coming under Ward no.6- Thanisandra of Byatarayanapura Constituency

In reference to the above subject, this is to bring to your kind notice that we have scrutinized the **First and Final bill** submitted by **M/S D.R Infrastructure, Sri Dilip T.S, Door No 115/A, Opp to UAS Layout, 1st Main Road, RMV 2nd stage, Bangalore-560094** towards the above said work and arrived at an amount of **Rs 1,07,09,445.69 (Rupees One Crore Seven Lakh Nine Thousand Four Hundred Forty Five and Sixty Nine Paise Only)** the work has been completed satisfactorily.

This is for your kind information.

Thank you and assuring you the best of our Services at all the times

For Tejus Consultants
(Nischal M)

A/C Ward No 6

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TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

ject	The Work of Providing and laying of 400mm/500 mm dia RCC NP3 Class Sewerage pipeline from Manjunatha Kalyana Mantapa To M.S.Ramaiah North City gate along Strom Water Drain (SWD) Coming under Ward no.6- Thanisandra of Byatarayanapura Constituency
nt	Bruhat Bangalore Mahanagar Palike
nsultant	TEJUS CONSULTANTS
ntractor	M/S D.R Infrastucture, sri Dilip T .S
ade of ncrete:	M20
e of cube:	150x150x150 mm
ference IS de:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	20-09-19	27-09-19	7 days	8.120	22500	260	11.56	11.61
2	20-09-19	27-09-19	7 days	8.130	22500	261	11.60	
3	20-09-19	27-09-19	7 days	8.140	22500	263	11.69	

ote:
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CONSULTANTS

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Project	The Work of Providing and laying of 400mm/500 mm dia RCC NP3 Class Sewerage pipeline from Manjunatha Kalyana Mantapa To M.S.Ramaiah North City gate along Strom Water Drain (SWD) Coming under Ward no.6- Thanisandra of Byatarayanapura Constituency
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M/S D.R Infrastucture, sri Dilip T .S
Grade of Concrete:	M20
Size of cube:	150x150x150 mm
Reference IS Code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	20-09-19	18-10-19	28 days	8.130	22500	463	20.58	20.76
2	20-09-19	18-10-19	28 days	8.138	22500	460	20.44	
3	20-09-19	18-10-19	28 days	8.146	22500	478	21.24	

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Test Report on Cement

TEJUS

Project	The Work of Providing and laying of 400mm/500 mm dia RCC NP3 Class Sewerage pipeline from Manjunatha Kalyana Mantapa To M.S.Ramaiah North City gate along Strom Water Drain (SWD) Coming under Ward no.6- Thanisandra of Byatarayanapura Constituency
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M/S D.R Infrastucture, sri Dilip T .S
Sample ID	Cement
Date of Sample Tested	20-09-19
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	35 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	340 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	3mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	26.00%	25 % to 35

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TEST REPORT	
Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	The Work of Providing and laying of 400mm/500 mm dia RCC NP3 Class Sewerage pipeline from Manjunatha Kalyana Mantapa To M.S.Ramaiah North City gate along Strom Water Drain (SWD) Coming under Ward no.6- Thanisandra of Byatarayanapura Constituency
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S D.R Infrastucture. sri Dilip T .S

SPECIFIC GRAVITY AND WATER ABSORPTION
FINE AGGREGATE (IS-2386-PART-3)

Type of Material	Fine aggregate (River Sand/ M sand)	**Proposed Use**	concrete
Location/Source	At Site/Plant	**Date of Sampling**	20-09-19
Period of Soaking	24 hours	**Date of Testing**	20-09-19

Sl. No.	Test Property		TRIAL - 1	TRIAL - 2	TRIAL - 3	
A	Weight of sturated surface dry sample gm.		648	679	658	
B	Weight of oven - dry sample gm.		641	672	648	
C	Weight of Pycnometer Filled with water gm		1275	1275	1275	
D	Weight of Pycnometer + sample + water gm		1682	1701	1690	
E	Bulk specific gravity	$\frac{B}{(C+A-D)}$	2.660	2.656	2.667	2.661
G	Absorption (%)	$\frac{(A-B)*100}{B}$	1.092	1.042	1.543	1.226

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Construction of Bridges and Improvement to Selected Arterial, Sub Arterial Roads and other connecting roads in Mahadevapura zone. GOK-2016-17-N-RI-MP-Package-10
Consultants	Tejus Consultants, Bangalore
Contractor	M/S D.R Infrastucture, sri Dilip T .S

SIEVE ANALYSIS

Total Weight:	3000 gms		
Type of Material	**Fine aggregate (River Sand/ M sand)**	**Proposed Use**	concrete
Sample Location	At Site/Plant	**Date of Sampling**	20-09-19
		Date of Testing	20-09-19

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	210	210	7.00	93.00	90 - 100
2.36 mm	306	516	17.20	82.80	75 - 100
1.18 mm	422	938	31.27	68.73	55 - 90
0.600 mm	486	1424	47.47	52.53	35 -59
0.300 mm	710	2134	71.13	28.87	8-30
0.150 mm	632	2766	92.20	7.80	0 - 10
Pan	234	3000			-

Remarks : Satisfactory / Not Satisfactory

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TEST REPORT

ients	Bruhat Bangalore Mahanagara Palike
roject	The Work of Providing and laying of 400mm/500 mm dia RCC NP3 Class Sewerage pipeline from Manjunatha Kalyana Mantapa To M.S.Ramaiah North City gate along Strom Water Drain (SWD) Coming under Ward no.6- Thanisandra of Byatarayanapura Constituency
onsultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
ontractor	M/S D.R Infrastucture, sri Dilip T .S
otal Weight:	10000 gms

SIEVE ANALYSIS

ype of Material	20 mm down size	Proposed Use	Concrete
ample Location	Plant/At site	Date of Sampling	20-09-19
		Date of Testing	20-09-19

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing
40.00 mm	0	0	0	100	100
20.00 mm	262	262	2.62	97.38	95 - 100
10.00 mm	4832	5094	50.94	49.06	25 - 55
4.75 mm	4220	9314	93.14	6.86	0 - 10
Pan	686	10000			

emarks : ✓ Satisfactory / Not Satisfactory

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	The Work of Providing and laying of 400mm/500 mm dia RCC NP3 Class Sewerage pipeline from Manjunatha Kalyana Mantapa To M.S.Ramaiah North City gate along Strom Water Drain (SWD) Coming under Ward no.6- Thanisandra of Byatarayanapura Constituency
Consultants	TEJUS CONSULTANTS
Contractor	M/S D.R Infrastucture, sri Dilip T .S
Total Weight:	10000 gms

SIEVE ANALYSIS

Type of Material	**12.5 mm down size**	**Proposed Use**	CONCRETE
Sample Location	At Site/Plant	**Date of Sampling**	20-09-19
		Date of Testing	20-09-19

IS Sieve Size (in mm)	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing
20.0	0	0	0	100	100
12.5	528	528	5.28	94.72	90-100
10.0	4695	5223	52.23	47.77	40-85
4.75	4555	9778	97.78	2.22	0-10
Pan	222	10000			

Remarks : ✓ Satisfactory / Not Satisfactory

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Quality Control / Assurance / Audit | Proof Checking (Structural Designs & Drawings)
Soil Stabilization and Shoring Services | Non - Destructive Testing

NABL ACCREDITED AS PER ISO/IEC 17025:2017

Job No.: CECTC/DR/QC/ 2019-20

Date: 16.09.2019

TEST RESULTS OF PHYSICAL PROPERTIES OF REINFORCEMENT STEEL

Client : **Bruhath Bangalore Mahanagara Palike**
Agency : **M/s. D R Infrastructure,** Contractor, Bangalore.
Name of Work : The Work of Providing and Laying of 400mm/500mm dia RCC NP3 Class Sewerage Pipeline from Manjunatha Kalyana Mantapa to M.S. Ramaiah North City Gate Along Strom Water Drain (SWD) Coming Under Ward No.6 Tanisandra of Byatarayanapura Constituency.

Sample Identification : 8mm, 10mm & 16mm Fe 500 TMT Bars
Technical Reference : IS 1786:2008, IS 1608:2005, IS 1599:1985 (Reaffirmed 2006)
Date of test: : 16.09.2019

Sl.No	Nominal size (dia in mm)	Mass per metre (kg/metre)	TENSILE STRENGTH		
			0.20 % proof stress/ yield stress (N/mm^2)	Tensile strength (N/mm^2)	Elongation, percent on gauge length
1	8	0.395	514	556	17
2	10	0.618	529	574	18
3	16	1.582	539	589	19

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For Civil Experts

Authorised Signature

174, Sri Ranga Complex, Amrutha Nagar Main Road, New Bank Colony, Kononakunte, Bangalore - 560 062.
Mobile : +91 97429 59595 | Tel/Fax : 080 2632 2565 | Email : civilexpertsltd@gmail.com | URL : www.civilexperts.co.in

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Soil Stabilization and Shoring Services | Non - Destructive Testing

NABL ACCREDITED AS PER ISO/IEC 17025:2017

Job No.: CECTC/DR/QC/ 2019-20

Date: 10.10.2019

TEST RESULTS OF PHYSICAL PROPERTIES OF REINFORCEMENT STEEL

Client : **Bruhath Bangalore Mahanagara Palike**
Agency : **M/s. D R Infrastructure,** Contractor, Bangalore.
Name of Work : The Work of Providing and Laying of 400mm/500mm dia RCC NP3 Class Sewerage Pipeline from Manjunatha Kalyana Mantapa to M.S. Ramaiah North City Gate Along Strom Water Drain (SWD) Coming Under Ward No.6 Tanisandra of Byatarayanapura Constituency.
Sample Identification : 8mm, 10mm & 16mm Fe 500 TMT Bars
Technical Reference : IS 1786:2008, IS 1608:2005, IS 1599:1985 (Reaffirmed 2006)
Date of test: : 10.10.2019

SLNo	Nominal size (dia in mm)	Mass per metre (kg/metre)	TENSILE STRENGTH		
			0.20 % proof stress/ yield stress ($N/mm^{2)}$	Tensile strength ($N/mm^{2)}$	Elongation, percent on gauge length
1	8	0.395	526	567	18
2	10	0.618	538	582	19
3	16	1.582	549	602	20

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Soil Stabilization and Shoring Services | Non - Destructive Testing

NABL ACCREDITED AS PER ISO/IEC 17025:2017

Job No.: CECTC/DR/QC/ 2019-20 Date: 18.11.2019

TEST RESULTS OF PHYSICAL PROPERTIES OF REINFORCEMENT STEEL

Client : **Bruhath Bangalore Mahanagara Palike**
Agency : **M/s. D R Infrastructure,** Contractor, Bangalore.
Name of Work : The Work of Providing and Laying of 400mm/500mm dia RCC NP3 Class Sewerage Pipeline from Manjunatha Kalyana Mantapa to M.S. Ramaiah North City Gate Along Strom Water Drain (SWD) Coming Under Ward No.6 Tanisandra of Byatarayanapura Constituency.
Sample Identification : 8mm, 10mm & 16mm Fe 500 TMT Bars
Technical Reference : IS 1786:2008, IS 1608:2005, IS 1599:1985 (Reaffirmed 2006)
Date of test: : 18.11.2019

Sl.No	Nominal size (dia in mm)	Mass per metre (kg/metre)	TENSILE STRENGTH		
			0.20 % proof stress/ yield stress ($N/mm^{2)}$	Tensile strength ($N/mm^{2)}$	Elongation, percent on gauge length
1	8	0.395	518	562	16
2	10	0.618	531	581	17
3	16	1.582	547	593	18

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TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Project	The Work of Providing and laying of 400mm/500 mm dia RCC NP3 Class Sewerage pipeline from Manjunatha Kalyana Mantapa To M.S.Ramaiah North City gate along Strom Water Drain (SWD) Coming under Ward no.6- Thanisandra of Byatarayanapura Constituency
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M/S D.R Infrastucture, sri Dilip T .S
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	22-11-19	29-11-19	7 days	8.122	22500	270	12.00	12.18
2	22-11-19	29-11-19	7 days	8.146	22500	279	12.40	
3	22-11-19	29-11-19	7 days	8.142	22500	273	12.13	

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TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Project	The Work of Providing and laying of 400mm/500 mm dia RCC NP3 Class Sewerage pipeline from Manjunatha Kalyana Mantapa To M.S.Ramaiah North City gate along Strom Water Drain (SWD) Coming under Ward no.6- Thanisandra of Byatarayanapura Constituency
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M/S D.R Infrastucture, sri Dilip T .S
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	22-11-19	20-12-19	28days	8.136	22500	430	19.11	20.55
2	22-11-19	20-12-19	28days	8.142	22500	465	20.67	
3	22-11-19	20-12-19	28days	8.148	22500	492	21.87	

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Test Report on Cement

TEJUS

Project	The Work of Providing and laying of 400mm/500 mm dia RCC NP3 Class Sewerage pipeline from Manjunatha Kalyana Mantapa To M.S.Ramaiah North City gate along Strom Water Drain (SWD) Coming under Ward no.6- Thanisandra of Byatarayanapura Constituency
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M/S D.R Infrastucture, sri Dilip T .S
Sample ID	Cement
Date of Sample Tested	22-11-19
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	37 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	346 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	2mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	29.00%	25 % to 35

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	The Work of Providing and laying of 400mm/500 mm dia RCC NP3 Class Sewerage pipeline from Manjunatha Kalyana Mantapa To M.S.Ramaiah North City gate along Strom Water Drain (SWD) Coming under Ward no.6- Thanisandra of Byatarayanapura Constituency
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S D.R Infrastucture, sri Dilip T .S

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	Fine aggregate (River Sand/ M sand)	Proposed Use	concrete
Location/Source	At Site/Plant	Date of Sampling	22-11-19
Period of Soaking	24 hours	Date of Testing	22-11-19

Sl. No.	Test Property		TRIAL - 1	TRIAL - 2	TRIAL - 3	
A	Weight of sturated surface dry sample gm.		648	678	658	
B	Weight of oven - dry sample gm.		641	670	648	
C	Weight of Pycnometer Filled with water gm		1275	1275	1275	
D	Weight of Pycnometer + sample + water gm		1682	1701	1690	
E	Bulk specific gravity	$\frac{B}{(C+A-D)}$	2.660	2.659	2.667	2.662
G	Absorption (%)	$\frac{(A-B)*100}{B}$	1.092	1.194	1.543	1.276

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	The Work of Providing and laying of 400mm/500 mm dia RCC NP3 Class Sewerage pipeline from Manjunatha Kalyana Mantapa To M.S.Ramaiah North City gate along Strom Water Drain (SWD) Coming under Ward no.6- Thanisandra of Byatarayanapura Constituency
Consultants	Tejus Consultants, Bangalore
Contractor	M/S D.R Infrastucture, sri Dilip T .S

SIEVE ANALYSIS

Total Weight:	3000 gms		
Type of Material	**Fine aggregate (River Sand/ M sand)**	**Proposed Use**	concrete
Sample Location	At Site/Plant	**Date of Sampling**	22-11-19
		Date of Testing	22-11-19

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	208	208	6.93	93.07	90 - 100
2.36 mm	302	510	17.00	83.00	75 - 100
1.18 mm	402	912	30.40	69.60	55 - 90
0.600 mm	482	1394	46.47	53.53	35 -59
0.300 mm	760	2154	71.80	28.20	8-30
0.150 mm	638	2792	93.07	6.93	0 - 10
Pan	208	3000			-

Remarks : ✓ Satisfactory / Not Satisfactory

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory/Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike	
Project	The Work of Providing and laying of 400mm/500 mm dia RCC NP3 Class Sewerage pipeline from Manjunatha Kalyana Mantapa To M.S.Ramaiah North City gate along Strom Water Drain (SWD) Coming under Ward no.6- Thanisandra of Byatarayanapura Constituency	
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore	
Contractor	M/S D.R Infrastucture, sri Dilip T .S	
Total Weight:	10000	gms

SIEVE ANALYSIS

Type of Material	20 mm down size	Proposed Use	Concrete
Sample Location	Plant/At site	Date of Sampling	22-11-19
		Date of Testing	22-11-19

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing
40.00 mm	0	0	0	100	100
20.00 mm	252	252	2.52	97.48	95 - 100
10.00 mm	4832	5084	50.84	49.16	25 - 55
4.75 mm	4210	9294	92.94	7.06	0 - 10
Pan	706	10000			

Remarks : Satisfactory / Not Satisfactory

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